

**Meeting of the Central Valley Flood Protection Board  
October 28, 2010**

**Staff Report – Encroachment Permit**

**City of Chico  
State Route 99 Bike Path Bridges, Butte County**

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**1.0 – ITEM**

To consider approval of Permit No. 18414 (Attachment B)

**2.0 – APPLICANT**

City of Chico

**3.0 – LOCATION**

The project is located within the City of Chico, on the east and west side of State Route 99, near Humboldt Road (Little Chico Creek, Butte County; Figure 1, Attachment A).

**4.0 – DESCRIPTION**

The applicant proposes to construct two 12-foot-wide, pre-manufactured steel truss pedestrian bridges, one 130 feet long and the other 70 feet long, supported between two abutments for each bridge, across the channel of Little Chico Creek, on the east and west sides of State Route (SR) 99 (Figure 2, Attachment A).

**5.0 – PROJECT ANALYSIS**

**Background and Proposed Project Design**

The City of Chico proposes to construct two 12-foot-wide pre-manufactured steel truss pedestrian bridges across the Little Chico Creek channel (Figure 3, Attachment A). These proposed bridges are part of the overall City of Chico SR 99 Bike Path System which will eventually provide connectivity for the surrounding community, schools and parks that parallel SR 99 (Figure 1, Attachment C). These proposed bridges would also replace an existing dry, or low water, crossing of Little Chico Creek which is proposed to be removed as part of the new bridge installations. The two abutments for each bridge are proposed to be placed just outside of or just slightly within the 200-year wetted flood flow perimeter but within the Little Chico Creek floodway (Figures 2 & 3, Attachment C).

The City of Chico requires the proposed bridge soffits to be designed 3 feet above the 200-year water surface elevation (WSEL). Therefore the soffits of both proposed pedestrian bridges will be set at 3 feet above the modeled 200-year WSEL at their respective locations in the field and within the existing conditions hydraulic model.

### **5.1 – Hydraulic Analysis**

The applicant contracted with Philip Williams & Associates, Ltd. (PWA), to perform hydraulic modeling of Little Chico Creek flood flows for the existing site condition, and for the existing plus both proposed bridges condition. PWA used the US Army Corps of Engineers (USACE) HEC-RAS one dimensional (1D) hydraulic model to generate flood flow simulations. They also gathered site specific cross section topographic data upstream and downstream of each proposed bridge from the City of Chico, along with flood flow data from various previous Little Chico Creek hydraulic studies.

The modeled upstream and project area flood flow used for this study was from the 2009 FEMA Flood Insurance Study (FIS) for Butte County (100-year flood flow = 3,700 cubic feet per second, or 3,700 cfs), which was determined the most appropriate out of the previous six Little Chico Creek hydraulic studies. Manning's "n" values used were developed taken from actual field condition observations and averaged 0.033 for this study reach. The FEMA FIS broad scale study used an average 0.06 "n" value.

Backwater conditions exist downstream of the existing SR 99 bridges during the 100-year flood because of overtopping at the Bruce Street Bridge, located approximately 850 feet downstream of SR 99. Therefore PWA utilized this backwatered WSEL from the FEMA FIS as the downstream boundary condition in the HEC-RAS models. Any out of bank losses previously noted in the FEMA FIS study were conservatively routed downstream through all cross sections and bridges for this study.

The PWA 1D hydraulic model results concluded the installation of the proposed pedestrian bridges will not decrease the flow capacity under the SR 99 bridges, or in Little Chico Creek itself. The study simulations also concluded there is an actual decrease in 100-year and 200-year WSEL under the SR 99 bridges of 0.01 foot from the existing conditions to the proposed conditions model (Figure 4, Attachment C). For the west proposed bridge, local WSEL respectively increased 0.02 and 0.03 for the estimated 100-year and 200-year flood flows. For the east proposed bridge, local WSEL respectively increased 0.01 for both the estimated 100-year and 200-year flood flows.

### **5.2 – Geotechnical Analysis**

No geotechnical investigation was needed for this project because the applicant does not propose to alter any natural area watercourses nor install other flood control features within Little Chico Creek as part of their proposed project.

## **6.0 – AGENCY COMMENTS AND ENDORSEMENTS**

The comments and endorsements associated with this project, from all pertinent agencies are shown below:

- The U.S. Army Corps of Engineers 208.10 comment letter has not yet been received for this application. Board staff anticipates a non-federal project comment letter from the Corps because Little Chico Creek is not part of a federal project. After review by Board staff, this letter will be incorporated into the permit as Exhibit A.
- There is no non-federal endorsing agency for this project.

## **7.0 – CEQA ANALYSIS**

Board staff has prepared the following CEQA findings:

The Board, as a responsible agency under CEQA, has reviewed the Initial Study/Mitigated Negative Declaration (IS/MND) and Mitigation Monitoring Plan (August 2008, SCH No. 1991063074) for the Little Chico Creek Bicycle Path Project, and the IS/MND (September 2009, SCH No. 2009092041) and Mitigation Monitoring Plan for the State Route 99 Corridor Bikeway Project, both prepared by the lead agency, the City of Chico. These documents, including project design, may be viewed or downloaded from the Central Valley Flood Protection Board website at <http://www.cvfpb.ca.gov/meetings/2010/10-28-29-2010agenda.cfm> under a link for this agenda item. The documents are also available for review in hard copy at the Board and City offices.

The City of Chico determined that the project would not have a significant effect on the environment and filed a Notice of Determination on September 5, 2008 with the Butte County Clerk for the Little Chico Creek Bicycle Path Project and on October 15, 2009 for the State Route 99 Corridor Bikeway Project. Both documents were administratively adopted by City Council of the City of Chico on July 1, 2008 with Resolution 52-08. Board staff finds that although the proposed project could have a potentially significant effect on the environment, there will not be a significant effect in this case because revisions in the projects have been made by or agreed to by the project proponent. The project proponent has incorporated mandatory mitigation measures into the project plans to avoid identified impacts or to mitigate such impacts to a point where no significant impacts will occur. These mitigation measures are included in the project proponent's respective Initial Study/Mitigated Negative Declarations and address impacts to air quality, biological resources, cultural resources, geology, hazardous materials, noise and transportation.

**8.0 – SECTION 8610.5 CONSIDERATIONS**

1. Evidence that the Board admits into its record from any party, State or local public agency, or nongovernmental organization with expertise in flood or flood plain management:

The Board will make its decision based on the evidence in the permit application and attachments, this staff report, and any other evidence presented by any individual or group.

2. The best available science that related to the scientific issues presented by the executive officer, legal counsel, the Department or other parties that raise credible scientific issues.

The accepted industry standards for the work proposed under this permit as regulated by Title 23 California Code of Regulations have been applied to the review of this permit.

3. Effects of the decision on the entire State Plan of Flood Control:

There are no effects on the State Plan of Flood Control as the proposed project does not impact the design channel capacity of Little Chico Creek.

4. Effects of reasonable projected future events, including, but not limited to, changes in hydrology, climate, and development within the applicable watershed:

Future events, changes in hydrology and climate may increase flows in Little Chico Creek which in turn would increase the flood risk for the project.

**9.0 – STAFF RECOMMENDATION**

Staff recommends that the Board adopt the CEQA findings, approve the permit upon receipt of a favorable comment letter from the Army Corps, and direct staff to file a Notice of Determination with the State Clearinghouse.

**10.0 – LIST OF ATTACHMENTS**

- A. Location Maps and Photos
- B. Draft Permit No. 18414
- C. Additional attachments (Detailed plans, hydraulic figures)

Design/Overall Review:  
Environmental Review:  
Document Review:

Jon Tice, P.E.  
James Herota / Andrea Mauro  
Gary Lemon, P.E. / Len Marino, P.E.

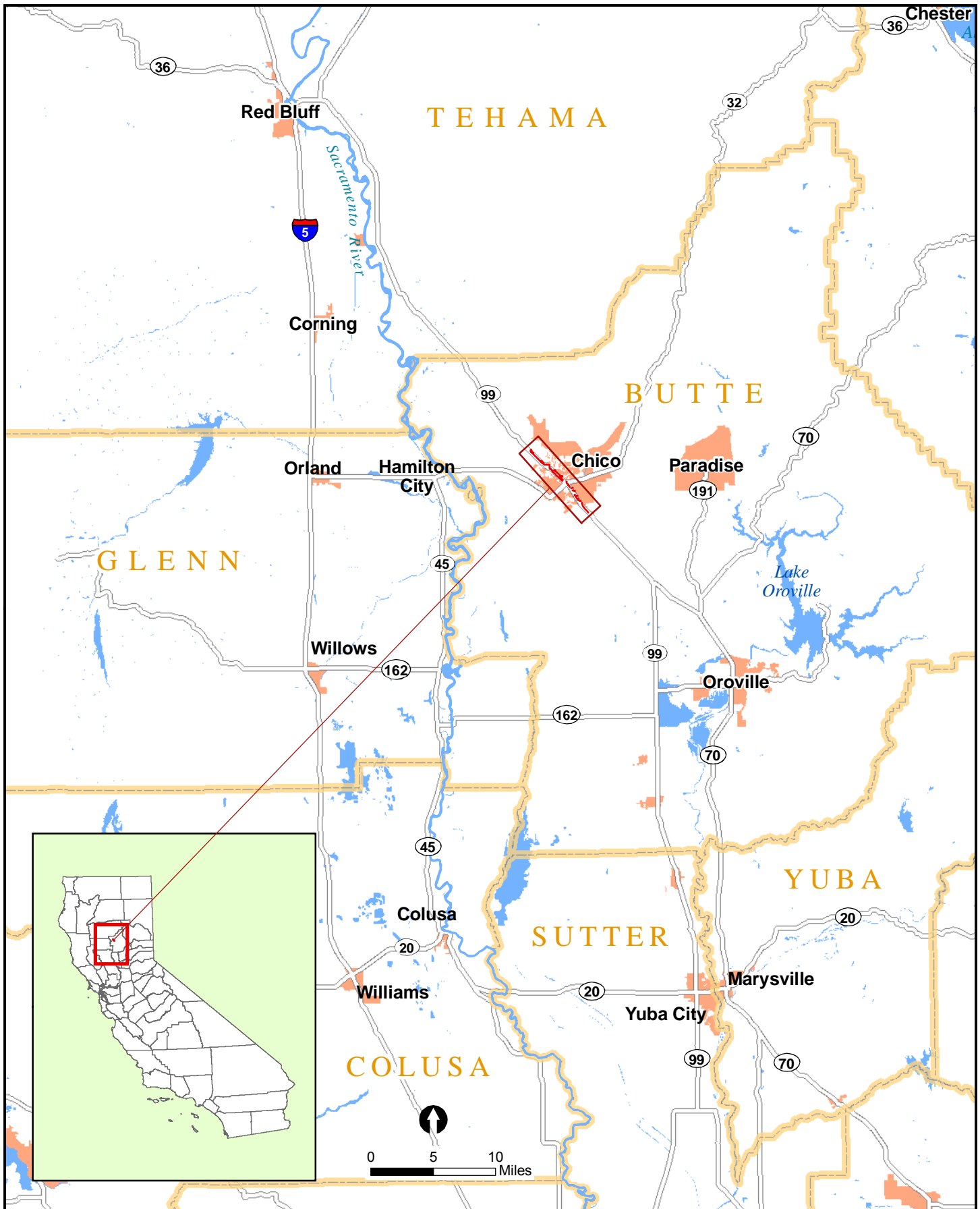


Figure 1: Site Location Map  
Initial Site Assessment  
Proposed Highway 99 Bike Path, City of Chico





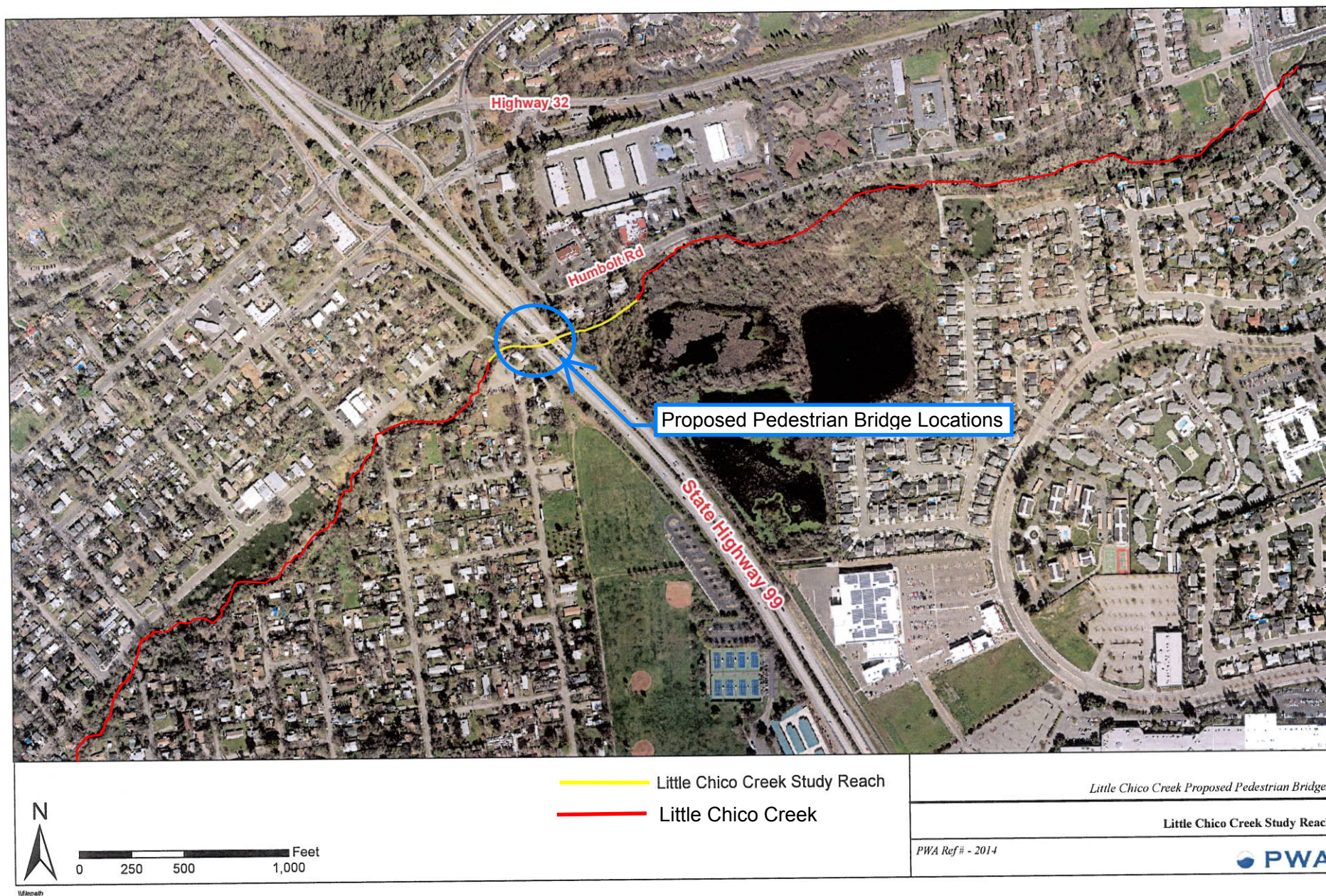


Figure 2, Attachment A



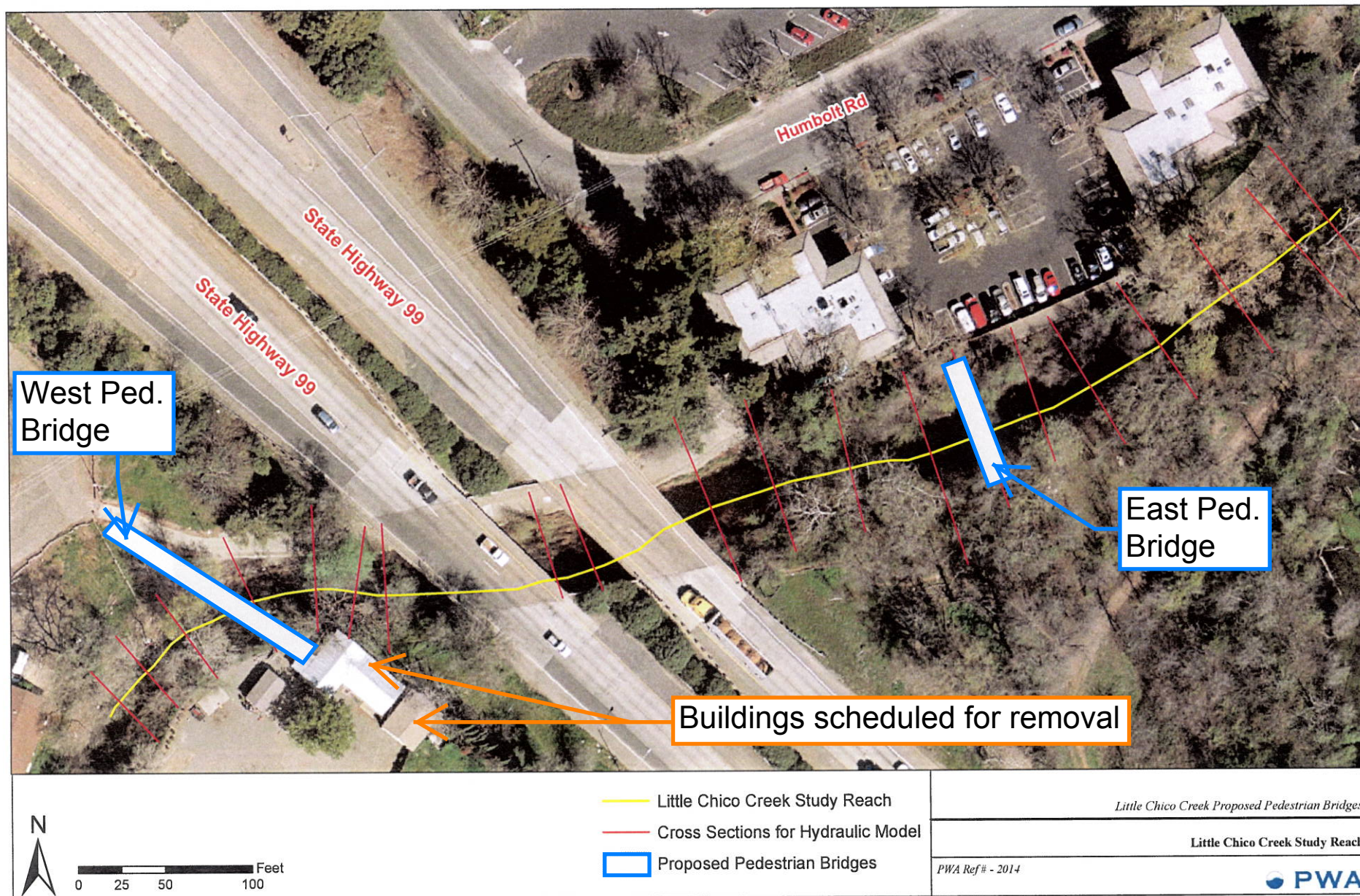


Figure 3, Attachment A





Source: PWA site visit conducted on February 18, 2010.

*Little Chico Creek Proposed Pedestrian Bridges*

Flow Area Beneath Highway 99

PWA Ref# 2014







Source: PWA site visit conducted on February 18, 2010.

*Little Chico Creek Proposed Pedestrian Bridges*

**Project Reach Upstream of Highway 99**

PWA Ref# 2014



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**DRAFT**

**Exhibit A**

STATE OF CALIFORNIA  
THE RESOURCES AGENCY  
**THE CENTRAL VALLEY FLOOD PROTECTION BOARD**

**PERMIT NO. 18414 BD**

**This Permit is issued to:**

City of Chico  
411 Main Street, PO Box 3420  
Chico, California 95927

To construct two 12-foot-wide pre-manufactured steel truss pedestrian bridges across the channel of Little Chico Creek, one 70 feet long and the other 130 feet long, each supported between two abutments, respectively located just east and west of State Route 99. The project is located in Chico at State Route 99 and Humboldt Avenue/Road (Section 25, T22N, R1E, MDB&M, Little Chico Creek, Butte County).

**NOTE:** Special Conditions have been incorporated herein which may place limitations on and/or require modification of your proposed project as described above.

**(SEAL)**

Dated: \_\_\_\_\_

\_\_\_\_\_  
Executive Officer

**GENERAL CONDITIONS:**

**ONE:** This permit is issued under the provisions of Sections 8700 – 8723 of the Water Code.

**TWO:** Only work described in the subject application is authorized hereby.

**THREE:** This permit does not grant a right to use or construct works on land owned by the Sacramento and San Joaquin Drainage District or on any other land.

**FOUR:** The approved work shall be accomplished under the direction and supervision of the State Department of Water Resources, and the permittee shall conform to all requirements of the Department and The Central Valley Flood Protection Board.

**FIVE:** Unless the work herein contemplated shall have been commenced within one year after issuance of this permit, the Board reserves the right to change any conditions in this permit as may be consistent with current flood control standards and policies of The Central Valley Flood Protection Board.

**Exhibit A**

**SIX:** This permit shall remain in effect until revoked. In the event any conditions in this permit are not complied with, it may be revoked on 15 days' notice.

**SEVEN:** It is understood and agreed to by the permittee that the start of any work under this permit shall constitute an acceptance of the conditions in this permit and an agreement to perform work in accordance therewith.

**EIGHT:** This permit does not establish any precedent with respect to any other application received by The Central Valley Flood Protection Board.

**NINE:** The permittee shall, when required by law, secure the written order or consent from all other public agencies having jurisdiction.

**TEN:** The permittee is responsible for all personal liability and property damage which may arise out of failure on the permittee's part to perform the obligations under this permit. If any claim of liability is made against the State of California, or any departments thereof, the United States of America, a local district or other maintaining agencies and the officers, agents or employees thereof, the permittee shall defend and shall hold each of them harmless from each claim.

**ELEVEN:** The permittee shall exercise reasonable care to operate and maintain any work authorized herein to preclude injury to or damage to any works necessary to any plan of flood control adopted by the Board or the Legislature, or interfere with the successful execution, functioning or operation of any plan of flood control adopted by the Board or the Legislature.

**TWELVE:** Should any of the work not conform to the conditions of this permit, the permittee, upon order of The Central Valley Flood Protection Board, shall in the manner prescribed by the Board be responsible for the cost and expense to remove, alter, relocate, or reconstruct all or any part of the work herein approved.

**SPECIAL CONDITIONS FOR PERMIT NO. 18414 BD**

**THIRTEEN:** All work approved by this permit shall be in accordance with the submitted drawings and specifications except as modified by special permit conditions herein. No further work, other than that approved by this permit, shall be done in the area without prior approval of the Central Valley Flood Protection Board.

**FOURTEEN:** The permittee is responsible for all liability associated with construction, operation, and maintenance of the permitted facilities and shall defend, indemnify, and hold the Central Valley Flood Protection Board and the State of California; including its agencies, departments, boards, commissions, and their respective officers, agents, employees, successors and assigns (collectively, the "State"), safe and harmless, of and from all claims and damages arising from the project undertaken pursuant to this permit, all to the extent allowed by law. The State expressly reserves the right to supplement or take over its defense, in its sole discretion

**FIFTEEN:** The permittee shall defend, indemnify, and hold the Central Valley Flood Protection Board and the State of California, including its agencies, departments, boards, commissions, and their respective officers, agents, employees, successors and assigns (collectively, the "State"), safe and harmless, of and from all claims and damages related to the Central Valley Flood Protection Board's approval of this permit, including but not limited to claims filed pursuant to the California Environmental Quality Act. The State expressly reserves the right to supplement or take over its defense, in its sole discretion.

**SIXTEEN:** The Central Valley Flood Protection Board and/or the California Department of Water Resources shall not be held liable for damages to the permitted encroachment(s) resulting from releases of water from reservoirs, flood fight, operation, maintenance, inspection, or emergency repair.

**SEVENTEEN:** The permittee shall contact the Department of Water Resources by telephone, (916)



**Exhibit A**

574-0609, and submit the enclosed postcard to schedule a preconstruction conference. Failure to do so at least 10 working days prior to start of work may result in delay of the project.

EIGHTEEN: No construction work of any kind shall be done during the flood season from November 1st to April 15th without prior written approval of the Central Valley Flood Protection Board.

NINETEEN: Cleared trees and brush shall be completely burned or removed from the floodway, and downed trees or brush shall not remain in the floodway during the flood season from November 1st to April 15th.

TWENTY: Temporary staging, formwork, stockpiled material, equipment, and temporary buildings shall not remain in the channel during the flood season from November 1st to April 15th.

TWENTY-ONE: The abutment(s) shall be constructed parallel to the direction of flow.

TWENTY-TWO: Compaction tests by a certified soils laboratory will be required to verify compaction of backfill within the channel section or within 10 feet of the channel bank.

TWENTY-THREE: Fill material shall be placed only within the area indicated on the approved plans.

TWENTY-FOUR: Backfill material for excavations shall be placed in 4- to 6-inch layers and compacted to at least the density of the adjacent, firm, undisturbed material.

TWENTY-FIVE: All debris generated by this project shall be properly disposed of outside the regulatory boundary of Little Chico Creek.

TWENTY-SIX: The work area shall be restored to the condition that existed prior to start of work.

TWENTY-SEVEN: Trees, brush, sediment, and other debris shall be kept cleared from the bridge site and disposed of outside the floodway to maintain the design flow capacity and flowage area.

TWENTY-EIGHT: If the bridge is damaged to the extent that it may impair the channel or floodway capacity, it shall be repaired or removed prior to the next flood season.

TWENTY-NINE: The permittee shall maintain the permitted encroachment(s) and the project works within the utilized area in the manner required and as requested by the authorized representative of the Department of Water Resources or any other agency responsible for maintenance.

THIRTY: In the event that erosion injurious to the adopted plan of flood control occurs at or adjacent to the herein permitted structure, the permittee shall repair the eroded area and propose measures, to be approved by the Central Valley Flood Protection Board, to prevent further erosion.

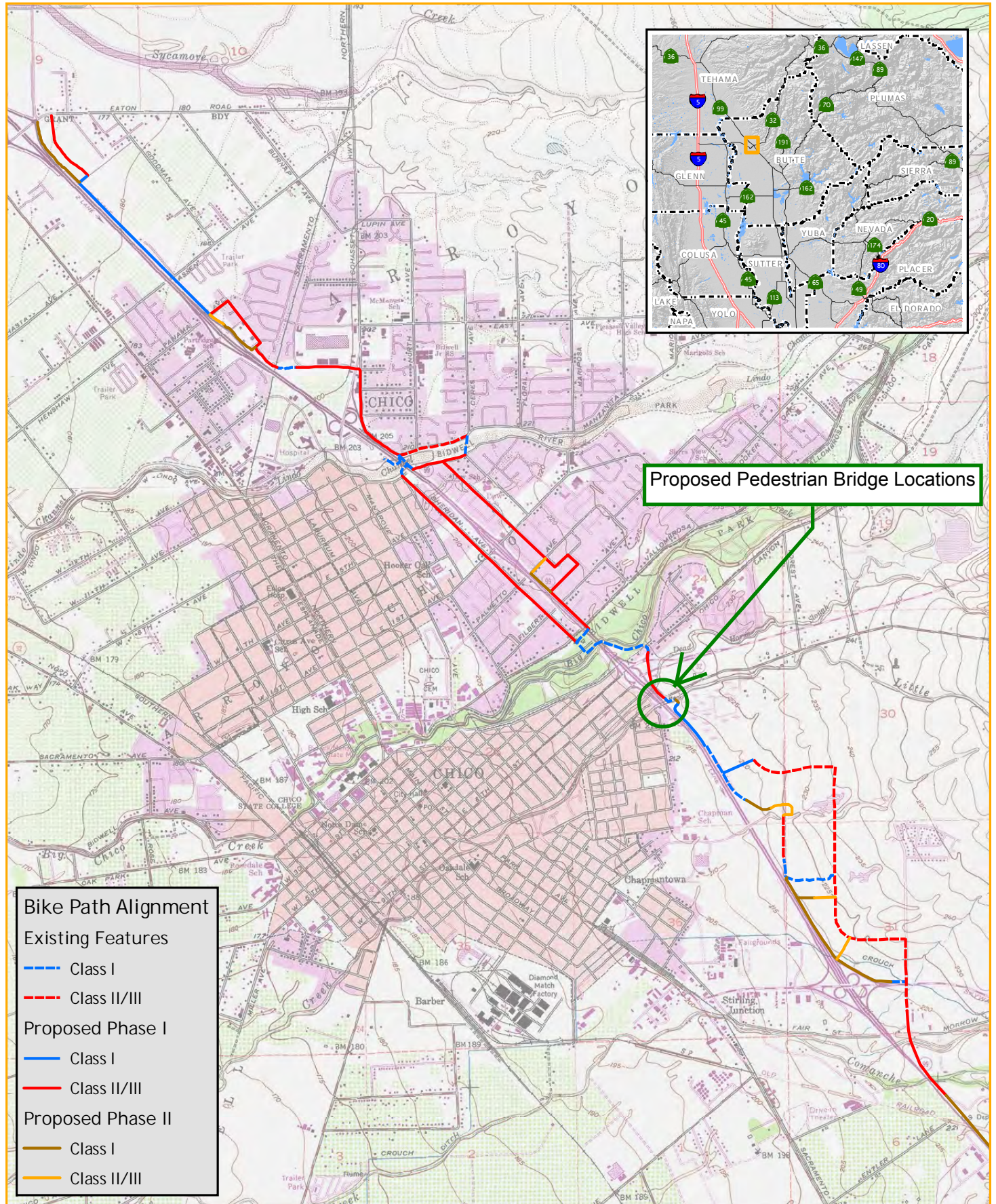
THIRTY-ONE: If the herein permitted structure results in an adverse hydraulic impact, the permittee shall provide appropriate mitigation measures, to be approved by the Central Valley Flood Protection Board, prior to implementation of mitigation measures.

THIRTY-TWO: The permittee shall comply with all conditions set forth in the letter from Army Corps of Engineers dated X, which is attached to this permit as Exhibit A and is incorporated by reference.

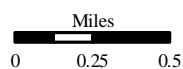
**Permit No. 18414 - Exhibit A**

**Army Corps Comment Letter**





Proposed Alignment based on City of Chico Capital Improvements AutoCAD drawing, subject to change.  
 Within Arroyo Chico Land Grant, and Section 25 of T22N, R1E, Sections 30, 31 of T22N, R2E, and Sections 5, 6 of T21N, R2E  
 Map show Chico and Richardson Springs USGS 7.5' Quads.  
 Map Date: September 4, 2009



**GALLAWAY CONSULTING**  
 A DIVISION OF NORTHSTAR ENGINEERING

Figure 1



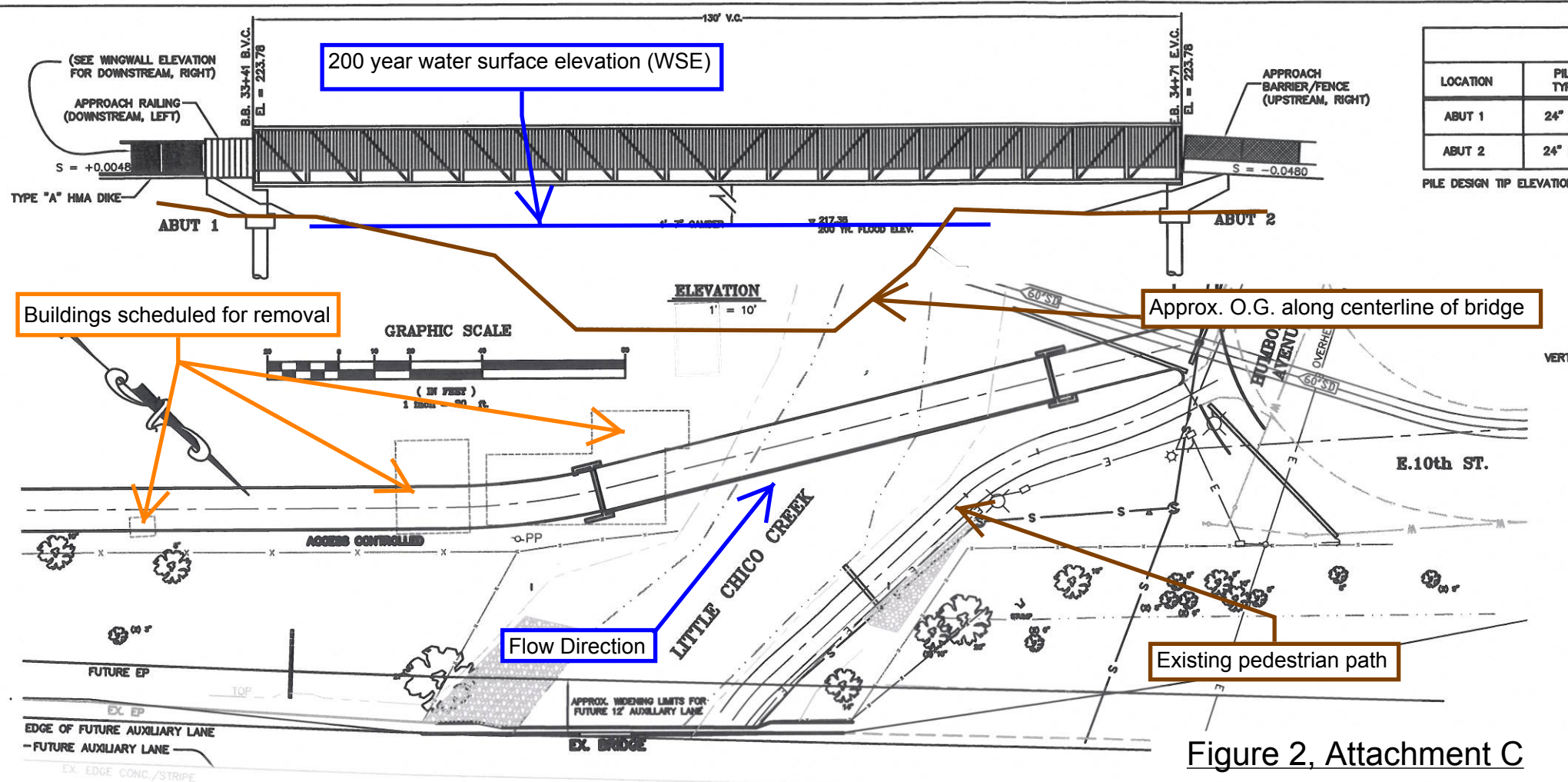
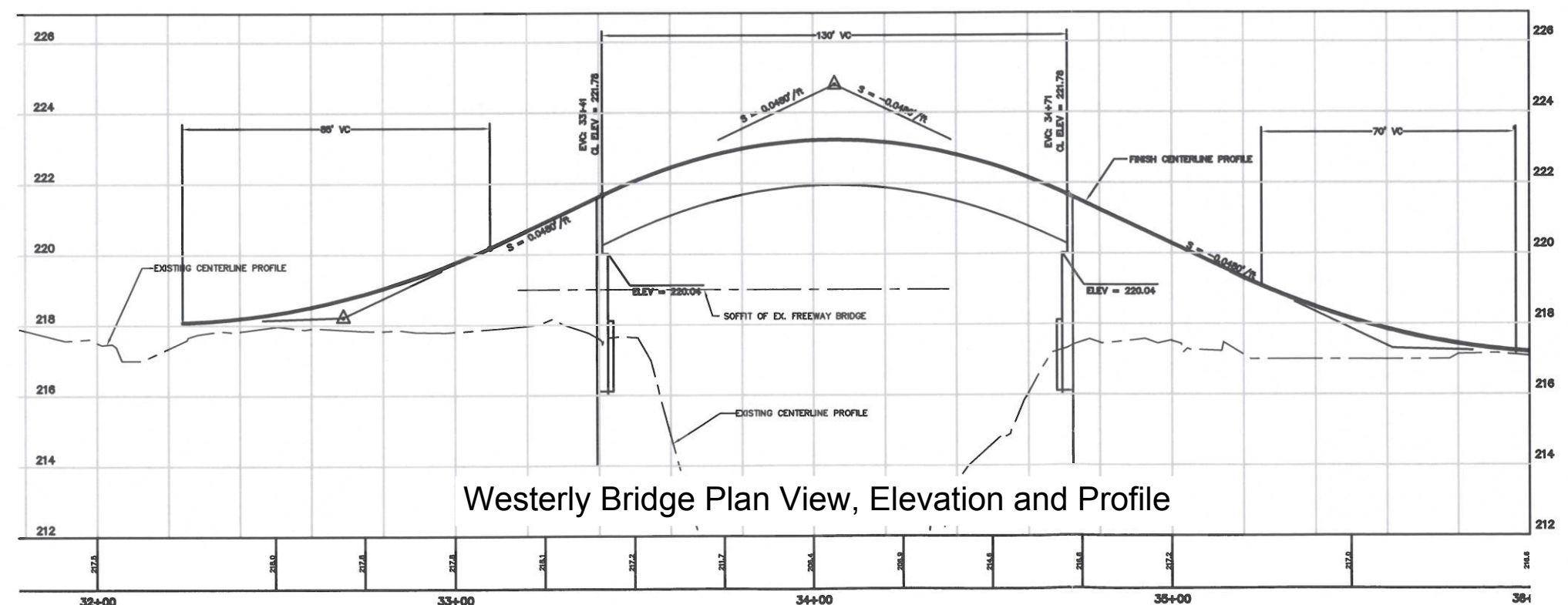


Figure 2, Attachment C



Westerly Bridge Plan View, Elevation and Profile

Designed: D.J.H.	Approved:	Revision	Date	By
Drawn By: CTJ/CLT	Date: DEC. 18, 2008			
Checked: D.J.H.				

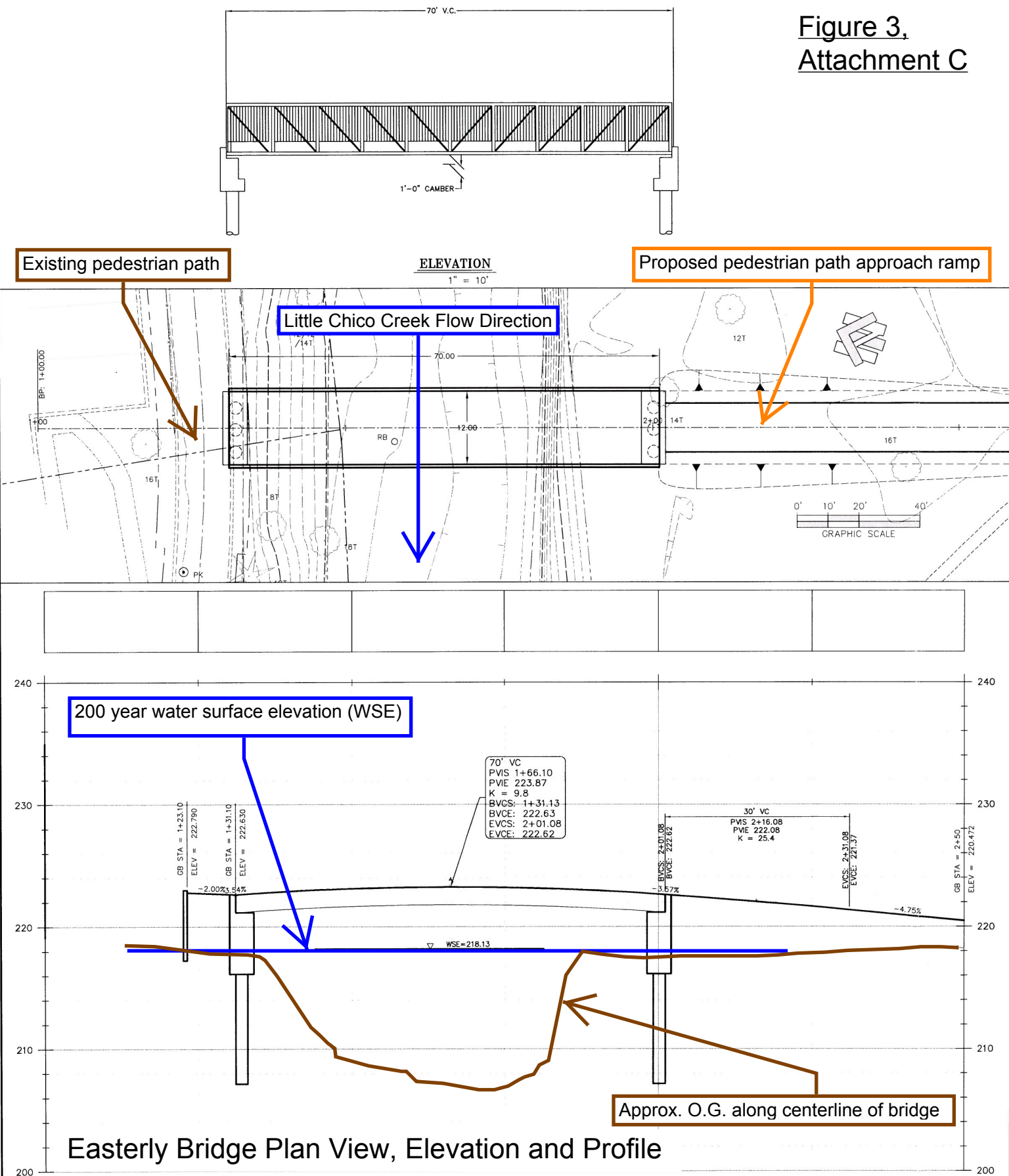
CITY OF CHICO  
CAPITAL PROJECT SERVICES DEPARTMENT



3259 ESPLANADE, SUITE 102  
CHICO, CALIFORNIA 95973  
(530) 899-9503

LITT  
PLAN AND

Figure 3,  
Attachment C



Designed:	Approved:	Revision	Date	By
Drawn By: GL	Date: FEB, 2010			
Checked:				

CITY OF CHICO  
CAPITAL PROJECTS SERVICES DEPARTMENT

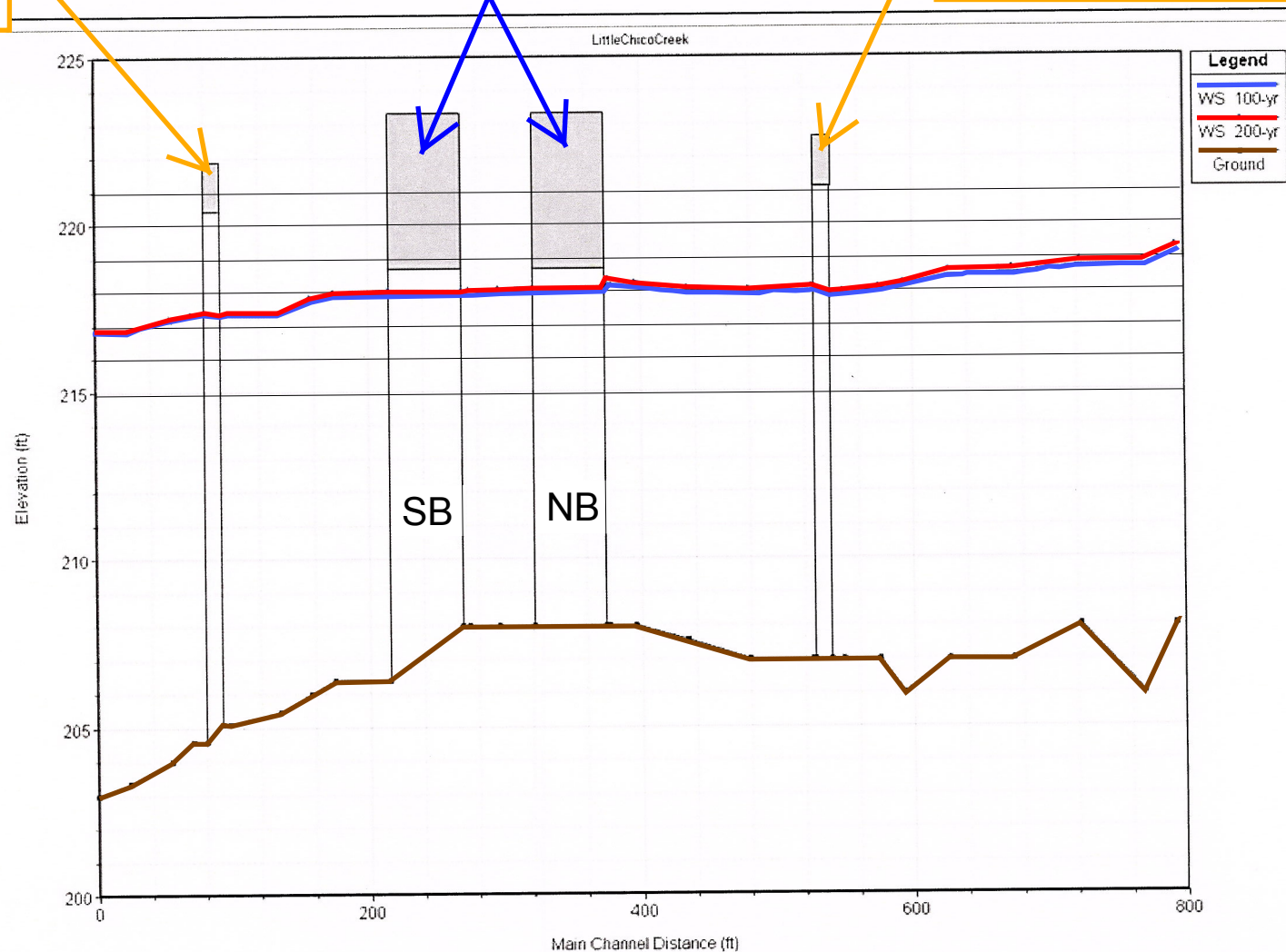




Proposed West  
Ped. Bridge

Existing SR99 Bridges

Proposed East Ped. Bridge



Source: PWA HEC-RAS model

*Little Chico Creek Proposed Pedestrian Bridges*

Proposed Conditions Profile, HEC-RAS Output

PWA Ref# 2014

